16

AI AND ACADEMICS: WHAT 500 NIGERIAN RESEARCHERS THINK.

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Abstract

Purpose: *The rebirth in AI research was as a result of advancements in computer technology and the availability of huge data sets, which led to the development of expert systems capable of making decisions based on rules and data. This article examines what 500 Nigerian researchers think about AI and Academics.*

Design/Method/Approach: *The study adopted the descriptive survey, evaluating data from 500 Nigerian researchers across the six geo-political zones. A structured questionnaire was designed with four clusters. Descriptive statistics, such as simple percentages, were used in answering the demographic and research questions. Administration of the instrument and collection of data was done through academic platforms of various institutions through Survey Monkey, which aided fast and ease in data clean-up.*

Findings: *The survey revealed positive views on the researchers' perceptions of integrating AI technologies in their research work, recognizing its potential to enhance research quality.*

Originality/Value: *This study provides valuable insight into the perceptions, benefits, and ethical challenges of AI adoption among 500 Nigerian researchers, highlighting a predominantly positive attitude towards AI's potential to improve the quality of research, speed up data analysis, and promote innovations.*

Implication: *The study implies that while Nigerian researchers are generally positive about the transformative potential of AI in academia, its effective integration requires deliberate efforts to overcome significant ethical, technical, and collaborative challenges. It suggests the critical need for interdisciplinary collaboration, continuous system updates, transparent practices, and robust ethical frameworks to ensure AI adoption enhances research without compromising fairness, privacy, security, or sustainability, which highlights the importance of proactive policy-making and capacity building to fully realize AI's benefits in the research landscape.*

Keywords: *Artificial Intelligence, Data Privacy, Researcher.*

Introduction

Since its inception in the 1950s, Artificial intelligence (AI) has made remarkable progress. In the years of AI research, there was a high expectation that computers would soon outdo human intelligence. However, the progress was slower than expected. In 1956, John McCarthy coined the term AI. He described it as the "science and engineering of creating machines." At

its core AI aims to develop machines that can emulate functions, like learning, problem-solving, and decision-making. These machines are intended to examine data sets, identify patterns, and make predictions based on that information. By the 1970s AI experienced a decline known as the "AI winter." This drawback was caused by limitations in computer capabilities during that period. The 1980s saw a rebirth in AI research, this was a result of advancements in computer technology and the availability of huge data sets, which led to the development of expert systems capable of making decisions based on rules and data. In the 21st century, AI research saw a huge change, with the emergence of big data, cloud computing, and powerful algorithms, this allowed machines to learn from huge volumes of data and make more accurate predictions.

The "Nigeria AI Landscape and Startups Report 2024" is a report by Sterling Bank in partnership with AI in Nigeria. The report offers the following:

- A comprehensive view of Nigeria's AI ecosystem and startup scene
- Insights into the challenges and opportunities within the AI landscape
- An emphasis on the pivotal role of AI in driving innovation and economic growth in Nigeria
- A review of the sectors driving the national economy
- An assessment of AI readiness and its impact on Nigeria's competitiveness
- A focus on the 60+ AI startups focused on leveraging AI to solve local and global challenges

This then provides a basis for this research knowing that AI has had a huge impact on academia, with researchers across fields using AI approaches in their day-to-day work. In Nigeria, AI has the potential to transform the way research is done. According to a survey done by the African Academy of Sciences, Nigeria has over 500 active researchers from diverse fields, who are working on AI-related projects.

One of the most significant areas where AI is influencing academics is data analysis. With the huge amount of data created in research, AI tools can assist researchers in making sense of the data and extracting valuable perceptions, which can result in more accurate and efficient research outputs. Even though some are not advocates of it, while others are, it is a hope that at the end of this study, which probs 500 Nigerian researchers on their perspectives, benefits, and ethical issues

that they are confronted with and possible solutions in overcoming these ethical issues.

Research Objectives

The study aims to:

1. Determine the perception of AI by 500 Nigerian researchers.
2. Identify the benefits derived from its utilization by 500 Nigerian researchers.
3. Examine the ethical issues in AI confronting 500 Nigerian researchers.
4. Identify possible solutions in overcoming ethical issues in AI confronting 500 Nigerian researchers.

Research Questions

1. What is the perception of AI among 500 Nigerian researchers?
2. What benefits do 500 Nigerian researchers derive from utilizing AI?
3. What Ethical issues in AI are being faced by 500 Nigerian researchers?
4. What possible solutions exist for overcoming ethical issues in AI encountered by 500 Nigerian researchers?

Literature Review

Empirical studies

Livberber & AyvazIn (2023), examine the impact of ChatGPT, an AI and machine learning technology, in the academic field and determine academics' perceptions of it. In-depth interviews were conducted with 10 academics, and their views on the subject were analyzed. It is seen that academics believe that ChatGPT will play a helpful role as a tool in scientific research and educational processes, and can serve as an inspiration for new topics and research areas. Despite these advantages, academics also have ethical concerns, such as plagiarism and misinformation. The study found that ChatGPT is viewed positively as a useful tool in scientific research and education, but ethical concerns such as plagiarism and misinformation need to be addressed. The study is similar to this study in the sense that both studies consider similar variables, the present study uses a questionnaire to elicit data from respondents, while the latter uses in-depth interviews, the present study focuses on Nigerian researchers while the latter focuses on Turkish academics.

Ekundayo, Khan, & Nuzhat (2023), explored the impact of artificial intelligence (AI) on academic research by conducting a focus group research strategy. The focus group consists of individuals who are actively involved in academic

research and have experience working with AI technologies, the focus group is conducted using Zoom video conferencing to gather academics from different institutions across the world. The study identified seven participants through purposive sampling, the focus group. Data analysis is conducted using a thematic analysis approach, with a focus on identifying key themes and patterns that emerge from the data. The findings of this study contribute to a better understanding of the impact of AI on academic research and provide insights into the potential future direction of AI in academic research. This present study focuses on academics in the six geopolitical zones, while the latter considered individuals who are actively involved in academic research and have experiences working with AI technologies, the present study used a questionnaire as a method of data collection from 600 researchers, while the latter identified seven participants through purposive sampling. The present study used simple percentages for data analysis while the latter used thematic analysis.

Adigwe, Onavbavba & Sanyaolu (2024), assessed the knowledge and perception of healthcare professionals in Nigeria regarding the application of artificial intelligence and machine learning in the health sector. A cross-sectional study was undertaken amongst healthcare professionals in Nigeria with the use of a questionnaire. Data were collected across the six geopolitical zones in the Country using a stratified multistage sampling method. Descriptive and inferential statistical analyses were undertaken for the data obtained. The study is similar to this study as both studies use questionnaires across the six geopolitical zones in Nigeria. The present study adopts simple percentages while the latter adopts a stratified multistage sampling method.

Methodology

Design

This study adopted the descriptive survey, a descriptive survey design is appropriate because it studied a group of researchers by collecting and evaluating data from 500 Nigerian researchers across the six geo-political zones.

Data Collection

The research is focused on primary sources of data by surveying 500 researchers from different institutions in Nigeria. The population for this study is 600 Nigerian researchers. A structured questionnaire was designed with four clusters. Descriptive statistics such as simple percentages were used in answering the demographic and research questions, and

administration of the instrument and collection of data was done through academic platforms of various institutions through Survey Monkey which aided fast and ease in data clean-up. The descriptive survey aims at collecting data and describing the data in a systematic manner (Nworgu, 2006). This design is considered appropriate for the study because; the researcher collected data and systematically described them.

Source of questionnaire

A structured questionnaire titled "AI and academics questionnaire" was designed. The 38-item inventory measures the perception, benefits, ethical issues, and possible solutions that exist for overcoming ethical issues in AI encountered by 500 Nigerian researchers, with four clusters, Cluster One has 8 items, Cluster Two has 12 items, Cluster Three has 9 items, and Cluster Four has 9 items. Two questions formed the demographic data, which is the researcher's experience and regions of the researchers. Participants are required to respond to each item on a 4-point scale (SA=Strongly Agree, A=Agree, SD=Strongly Disagree, D=Disagree).

Study Findings

Response Rate

The questionnaires were distributed to the researchers on different institutional platforms from the six geo-political regions using Survey Monkey, the population of this study was 500 researchers. A total of 600 researchers were targeted based on the number of people on the platforms. A total of 500 researchers responded to the survey, with a significant majority of the respondents 63.7% of respondents having over six years of research experience, 15.3% of respondents having between one to two years of experience, and 22.0% of respondents having three to five years of experience. The North East region has a dominant presence with 67.8% of respondents, both North West and North Central regions have an equal share of 8.5% of respondents, South West and South East regions have 5.1% and 6.8% of respondents respectively, and the South-South region with 3.4% of respondents.

Research question 1: What is the perception of AI among 500 Nigerian researchers?

Question	Perception Variables	Response			
		SA	A	SD	D
1.	AI technologies have the potential to improve the quality of my research.	61.0%	32.2%	6.8%	-

2.	AI can improve the accuracy and reliability of my research findings.	39.0%	49.2%	11.8%	-
3	Integrating AI tools into my research workflow would require significant time and effort for learning and implementation.	28.8%	55.9%	8.5%	-
4	AI-driven analysis can help in uncovering patterns and insights that may not be apparent through traditional research methods.	39.0%	49.2%	11.9%	-
5	AI technologies have the potential to revolutionize the way I conduct research.	45.8%	44.1%	6.8%	-
6	AI has the potential to offer me greater access to research tools and resources.	49.2%	49.9%	4.5%	2.1%
7	Collaborating with AI experts or data scientists is essential for successfully integrating AI into my research.	33.9%	55.9%	5.1%	5.1%
8	AI-driven automation might reduce job opportunities for researchers like me, or even lead to job displacement	22.0%	33.9%	18.6%	25.4%

Table 1

Table 1 indicates that 61.0% of respondents on item 1 strongly agree that AI technologies have the potential to enhance their research quality. 32.2% of respondents agree with the statement, and 6.8% of respondents strongly disagree with the impact of AI technologies in research. 39.0% of respondents on item 2 strongly agree that AI can improve the accuracy and reliability of their research findings, 49.2% of respondents also agree with the statement, while 11.8% of respondents strongly disagree with the statement. 28.8% of respondents on item 3 strongly agree that integrating AI tools into their research workflow would require substantial time and effort for learning and implementation, 55.9% agree, and 8.5% of respondents strongly disagree with the statement. 39.0% of respondents on item 4 strongly agree that AI-driven analysis can help uncover patterns and insights that may not be apparent through traditional research methods, 49.2% of respondents agree with the statement, and 11.9% of respondents strongly disagree. 45.8% of respondents on item 5 strongly agree that AI technologies have the potential to revolutionize the way they conduct research, 44.1% of respondents agree with

the statement, and 6.8% of respondents strongly disagree with the statement. 43.5% of respondents on item 6 strongly agree that AI has the potential to offer me greater access to research tools and resources, 49.9% of respondents agree with the statement, 4.5% strongly disagree and 2.1% of the respondents disagree with the statement. 33.9% of respondents on item 7 strongly agree that collaborating with AI experts or data scientists is essential for successfully integrating AI into their research. 55.9% of respondents agree with the statement, 5.1% of respondents strongly disagree, and 5.1% of respondents disagree with the statement. 22.0% of respondents on item 8 strongly agree that AI-driven automation might reduce job opportunities for researchers like them, or even lead to job displacement, 33.9% of respondents agree with the statement, 18.6% of respondents strongly disagree, and 25.4% of respondents disagree with the statement.

Research question 2: What benefits do 500 Nigerian researchers derive from utilizing AI?

Question	Perception Variables	Response			
		SA	A	SD	D
1	AI technologies have significantly sped up data analysis in my field of research.	40.6%	49.2%	5.1%	5.1%
2	The use of AI tools has streamlined my research process, making it more efficient.	39.0%	50.8%	1.7%	8.5%
3	AI enables me to conduct more precise analysis of extensive datasets compared to traditional methods.	45.7%	40.7%	3.4%	10.2%
4	AI helps me in uncovering patterns in data that would be difficult to detect manually.	42.3%	49.2%	3.4%	5.1%
5	AI contributes to generating novel insights and innovations in my research area.	35.6%	55.9%	5.1%	3.4%
6	I have witnessed how integrating AI fosters interdisciplinary collaborations, ultimately leading to groundbreaking discoveries.	39.0%	50.8%	1.7%	8.5%
7	The application of AI in my research enhances the quality of the findings I publish.	23.7%	61.0%	1.7%	13.6%
8	AI tools play a crucial role in ensuring the integrity and reliability of the data I work with.	18.6%	54.2%	6.8%	20.3%
9	AI tools have directly enhanced the communication and	40.7%	50.8%	1.7%	6.8%

	dissemination of research findings.				
10	AI has the potential to address complex research problems that are beyond human computation.	42.4%	49.2%	5.1%	3.4%
11	Employing AI approaches has expanded the horizons of inquiry in my research, revealing new questions and avenues for exploration	33.9%	62.7%	1.7%	1.7%
12	AI algorithms are valuable in making predictive analyses that directly influence decision-making in research.	35.6%	62.7%	1.7%	-

Table 2

Table 2 indicates that 40.6% of respondents on item 1 strongly agree that AI technologies have significantly sped up data analysis in their field of research, 49.2% agree with the statement, 5.1% of respondents strongly disagree and 5.1% of respondents disagree with the statement. 39.0% of respondents on item 2 strongly agree that the use of AI tools has streamlined their research process, making it more efficient, 50.8% of respondents agree with the statement, 1.7% of respondents strongly disagree, and 8.5% of respondents disagree with the statement. 45.7% of respondents on item 3 strongly agree that AI enables them to conduct more precise analysis of extensive datasets compared to traditional methods, 40.7% of respondents agree with the statement, 3.4% of respondents strongly disagree, and 10.2% disagree with the statement. 42.3% of respondents on item 4 strongly agree that AI helps them uncover patterns in data that would be difficult to detect manually, 49.2% of respondents agree with the statement, 3.4% of respondents strongly disagree, and 5.1% disagree with the statement. 35.6% of respondents on item 5 strongly agree that AI contributes to generating novel insights and innovations in their research area, 55.9% of respondents agree with the statement, 5.1% of respondents strongly disagree, and 3.4% of respondents disagree with the statement. 39.0% of respondents on item 6 strongly agree that they have witnessed how integrating AI fosters interdisciplinary collaborations, ultimately leading to groundbreaking discoveries, 50.8% of respondents agree with the statement, 1.7% of respondents strongly disagree, and 8.5% of respondents disagree with the statement. 23.7% of respondents on item 7 strongly agree that the application of AI in their research enhances the quality of the findings they publish, 61.0% of

respondents agree with the statement, 1.7% of respondents strongly disagree, and 13.6% of respondents agree with the statement. 18.6% of respondents on item 8 strongly agree that AI tools play a crucial role in ensuring the integrity and reliability of the data they work with, 54.2% of respondents agree with the statement, 6.8% of respondents strongly disagree, and 20.3% of respondents disagree with the statement. 40.7% of respondents on item 9 strongly agree that AI tools have directly enhanced the communication and dissemination of their research findings, 50.8% of respondents agree with the statement, 1.7% of respondents strongly disagree, and 6.8% of respondents disagree with the statement.

42.4% of respondents on item 10 strongly agree that AI has the potential to address complex research problems that are beyond human computation, 49.2% of respondents agree with the statement, 5.1% of respondents strongly disagree, and 3.4% of respondents disagree with the statement. 33.9% of respondents on item 11, strongly agree that employing AI approaches has expanded the horizons of inquiry in their research, revealing new questions and avenues for exploration, 62.7% of respondents agree with the statement, 1.7% of respondents strongly disagree, and 1.7% of respondents disagree with the statement. 35.6% of respondents on item 12, strongly agree that AI algorithms are valuable in making predictive analyses that directly influence decision-making in research, 62.7% of respondents agree with the statement, and 1.7% of respondents strongly disagree with the statement.

Research question 3: What Ethical issues in AI are being faced by 500 Nigerian researchers?

Question	Perception Variables	Response			
		VC	C	NVC	NCA
1	AI to maintain preexisting biases in study findings.	25.4%	54.2%	16.9%	3.4%
2	Ensuring fairness in AI outputs is an important ethical duty in my research.	49.2%	47.4%	1.7%	1.7%
3	Protecting the privacy of data used for AI research	44.1%	44.1%	10.2%	1.6%
4	Informed consent for data used in AI research is obtained and respected.	39.0%	45.8%	13.5%	1.7%
5	The transparency of AI algorithms is adequate to comprehend and have trust in their decisions.	28.8%	52.5%	13.6%	5.1%
6	AI's lack of transparency in nature	20.3%	47.5%	28.8%	3.4%

	doesn't affect its ability to reproduce research findings.				
7	Determining accountability for the outcomes of AI systems is straightforward in my research context.	30.4%	49.2%	15.3%	5.1%
8	There are security measures in place to protect AI systems in research from malicious attacks.	42.4%	44.0%	10.2%	3.4%
9	The environmental impact of AI computations is a significant concern in the ethical evaluation of research projects.	37.3%	49.2%	11.8%	1.7%

Table 3

Table 3 indicates that 25.4% of respondents on item 1, are very concerned about AI maintaining preexisting biases in study findings, 54.2% are concerned, 16.9% of respondents are not very concerned, and 3.4% of respondents are not concerned at all. 49.2% of respondents on item 2, are very concerned that ensuring fairness in AI outputs is an important ethical duty in my research, 47.4% of respondents are concerned, 1.7% of respondents are not very concerned and 1.7% are not concerned at all. 44.1% of respondents on item 3, are very concerned about Protecting the privacy of data used for AI research, 44.1% of respondents are concerned, 10.2% of respondents are not very concerned, and 1.6% of respondents are not very concerned at all.

39.0% of respondents on item 4, are very concerned that informed consent for data used in AI research is obtained and respected, 45.8% of respondents are concerned, 13.5% of respondents are not very concerned, and 1.7% of respondents are not concerned at all. 28.8% of respondents on item 5 are very concerned that the transparency of AI algorithms is adequate to comprehend and have trust in their decisions, 52.5% of respondents are concerned, 13.6% of respondents are not very concerned, and 5.1% are not concerned at all. 20.3% of respondents on item 6 are very concerned that AI's lack of transparency in nature doesn't affect its ability to reproduce research findings, 47.5% of respondents are concerned, 28.8% of respondents are not very concerned, and 3.4% of respondents are not concerned at all. 30.4% of respondents on item 7, are very concerned that determining accountability for the outcomes of AI systems is straightforward in their research context, 49.2% of respondents are concerned, 15.3% of respondents are not very concerned, and

5.1% of respondents are not concerned at all. 42.4% of respondents on item 8, are very concerned that there are security measures in place to protect AI systems in research from malicious attacks, 44.0% of respondents are concerned, 10.2% of respondents are not very concerned, and 3.4% of respondents are not concerned at all. 37.3% of respondents on item 9, are very concerned that the environmental impact of AI computations is a significant concern in the ethical evaluation of research projects, 49.2% of respondents are concerned, 11.8% of respondents are not very concerned, and 1.7% of respondents are not concerned at all.

Research question 4: What possible solutions exist for overcoming ethical issues in AI encountered by 500 Nigerian researchers?

Question	Perception Variables	Response			
		SA	A	SD	D
1	Update and monitor AI systems to identify and mitigate biases.	50.8%	45.8%	3.4%	-
2	Integrating fairness and bias detection algorithms in AI systems.	49.2%	45.7%	1.7%	3.4%
3	Implement data access controls to ensure data usage complies with privacy regulations	45.8%	50.8%	3.4%	-
4	Develop clear and comprehensive consent forms and ensure non-experts easily understand the consent process	42.4%	50.8%	1.7%	5.1%
5	Document and share information about the data, algorithms, and evaluation methods used in research	39.0%	55.9%	1.7%	3.4%
6	Adopting standards for documenting datasets, algorithms, and training processes used.	50.8%	49.2%	-	-
7	Ensure valid testing and validation processes are in place to foresee and mitigate potential negative outcomes.	49.2%	49.2%	1.6%	-
8	Implement cybersecurity measures such as regular security audits, threat modeling, and adopting secure coding practices.	50.8%	44.1%	1.7%	3.4%
9	Evaluate and prioritize research projects based on their environmental impacts.	50.8%	42.4%	1.7%	5.1%

Table 4

Table 4 indicates that 50.8% of respondents on item 1, strongly agree that updating and monitoring AI systems identifies and mitigates biases, 45.8% of respondents agree with the statement, and 3.4% of respondents strongly disagree with the statement. 49.2% of respondents on item 2, strongly agree that integrating fairness and bias detection algorithms in AI systems, 45.7% of respondents agree with the statement, 1.7% of respondents strongly disagree, and 3.4% of respondents disagree with the statement. 45.8% of respondents on item 3, strongly agree that implementing data access controls to ensure data usage complies with privacy regulations, 50.8% of respondents agree with the statement, and 3.4% of respondents strongly disagree with the statement. 42.4% of respondents on item 4, strongly agree that developing clear and comprehensive consent forms and ensuring non-experts easily understand the consent process, 50.8% of respondents agree with the statement, 1.7% of respondents strongly disagree, and 5.1% of respondents disagree with the statement. 39.0% of respondents on item 5, strongly agree that documenting and sharing information about the data, algorithms, and evaluation methods used in research, 55.9% of respondents agree with the statement, 1.7% of respondents strongly disagree, and 3.4% of respondents disagree with the statement. 50.8% of respondents on item 6, strongly agree that Adopting standards for documenting datasets, algorithms, and training processes used, 49.2% of respondents agree with the statement, and no respondents disagree with the statement. 49.2%of respondents on item 7, strongly agree that ensuring valid testing and validation processes are in place to foresee and mitigate potential negative outcomes, 49.2% of respondents agree with the statement, and 1.6% of respondents strongly disagree with the statement. 50.8% of respondents on item 8, strongly agree that implementing cybersecurity measures such as regular security audits, threat modeling, and adopting secure coding practices, 44.1% of respondents agree with the statement, 1.7% of respondents strongly disagree, and 3.4% of respondents disagree with the statement. 50.8% of respondents on item 9, strongly agree to evaluate and prioritize research projects based on their environmental impacts, 42.4% of respondents agree with the statement, 1.7% of respondents strongly disagree, and 5.1% of respondents disagree with the statement.

Discussion of findings

The survey data highlights a general optimism among researchers regarding AI and Academics. A significant majority of respondents believe that AI can provide more precise and reliable results, streamline research processes, and foster innovative approaches. However, they also acknowledge the challenges in integrating AI, noting the substantial time and effort required for learning and implementation. Collaboration with AI experts and data scientists is deemed essential for successful integration, indicating the importance of interdisciplinary efforts.

Despite the positive outlook, ethical and practical concerns are prominent among respondents. They emphasize the need for robust ethical guidelines to address biases and privacy issues in AI outputs. Concerns about the environmental impact of AI computations and the security of AI systems further highlight the necessity of sustainable and secure practices. Addressing these challenges through updating AI systems, ensuring transparency, and implementing comprehensive training and ethical frameworks will be crucial for leveraging the full potential of AI in research.

Limitation And Recommendation

The study faces several limitations, primarily related to the reliance on self-reported data. The respondents' views may not fully reflect the broader research community, potentially limiting the generalizability of the findings. Self-reported data can introduce biases, such as social desirability bias, which may lead to overestimation of AI's positive impacts or underreporting of challenges. Additionally, the study may not capture the full range of AI technologies and their varying levels of effectiveness and accessibility, which can differently impact researchers' experiences and perceptions. This study might not explore the specific reasons behind respondents' attitudes, lacking qualitative insights into their perceptions. Rapid technological advancements in AI could render the findings quickly outdated as new tools and methods emerge. Furthermore, the study may not thoroughly address the practical steps needed to implement ethical guidelines and ensure transparency in AI usage.

Based on the findings of this study, the following recommendations are made;

1. Develop training programs that equip researchers with the necessary skills and knowledge, these programs should cover the fundamentals of AI, practical applications, and advanced techniques to ensure seamless integration and

effective utilization of AI technologies in research.

2. Establish ethical guidelines for AI use in research, these guidelines should be accompanied by oversight mechanisms, such as ethics review boards and continuous monitoring systems, to ensure compliance and address any ethical issues that arise.
3. Foster interdisciplinary collaboration by encouraging partnerships between researchers and AI experts, this collaboration can help researchers leverage AI's full potential while addressing technical challenges and ethical considerations.
4. Establish and standardize data governance protocols, including data access controls, comprehensive documentation practices, and regular security audits, by adopting secure coding practices and threat modeling, researchers can protect AI systems from malicious attacks and ensure the reliability and reproducibility of their research findings.

Conclusion

The discussion of the result is based on the research questions that guided the study.

What is the perception of AI among 500 Nigerian researchers?

The survey results reveal significant insight into researchers' perceptions of integrating AI technologies in their research work. A significant majority of the respondents either strongly agree or agree that AI technologies have the potential to enhance research quality, improve the accuracy and reliability of research findings, require substantial time and effort to integrate AI tools into their workflow, the potential of AI to revolutionize research methods, AI-driven analysis can uncover new patterns and insights, underscoring AI's value can enhance research depth and AI can provide greater access to research tools and resources. However, there are notable concerns about job displacement due to AI-driven automation.

What benefits do 500 Nigerian researchers derive from utilizing AI?

The survey results indicate a predominantly position reception towards the benefits researchers derive from utilizing AI, majority of the respondents affirm that AI has significantly sped up data analysis in their field, streamlined their research process, and precise analysis of extensive datasets compared to traditional methods, uncover patterns in data that would be difficult to detect manually, capability in revealing deeper insights, integrating AI to foster collaborations leading to groundbreaking

discoveries. However, there are concerns about the integrity and reliability of data.

What Ethical issues in AI are being faced by 500 Nigerian researchers?

The survey result highlights several key ethical concerns among researchers regarding the use of AI in research, majority of the respondents are very concerned about AI maintaining preexisting biases in study findings, ensuring fairness in AI outputs, the privacy of data used in AI research, AI's lack of transparency affecting its ability to reproduce research findings, accountability of AI outcomes, security measures to protect AI systems from malicious attacks, and environmental impact of AI computations. However, there are concerns of ethical considerations that researchers must address when integrating AI into their work.

What possible solutions exist for overcoming ethical issues in AI encountered by 500 Nigerian researchers?

The survey result highlights a strong consensus among respondents on possible solutions for overcoming ethical issues on AI. A significant number of respondents agree that updating and monitoring AI systems are essential for identifying and mitigating biases, integrating fairness and bias detection algorithms within AI systems, implementing data access controls to comply with privacy regulations, supporting stringent data governance practices, developing clean and comprehensible consent forms, and regular security audits, threat modelling and adopting secure coding practices.

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